

\$FLIR

Thermal quality control on domestic appliances



Motorcycle break testing



FLIR A655sc

High resolution science grade LWIR camera

The A655sc helps engineers, researchers, and scientists see and accurately quantify thermal patterns, leakage, dissipation, and other heat-related factors in equipment, products, and processes in real time.

IMAGE QUALITY AND THERMAL SENSITIVITY

FLIR A655sc is equipped with an uncooled, maintenance free, Vanadium Oxide (VoX) microbolometer detector that produces thermal images of 640 x 480 Pixels. These pixels generate crisp and clear detailed images that are easy to interpret with high accuracy. The FLIR A655sc will make temperature differences as small as 50 mK clearly visible.

HIGH SPEED WINDOWING

The FLIR A655sc provides 14-bit data up to 50 frames per second at full frame 640×480 resolution. It has a high speed windowing function that increases the output frame rate up to 200 Hz at a 640×120 pixel window.

GIGE VISION™ STANDARD COMPATIBILITY

GigE Vision allows fast image transfer using low cost standard cables up to 100 meters. With GigE Vision, hardware and software from different vendors can integrate seamlessly over gigabit ethernet connections.

GENICAM™ PROTOCOL SUPPORT

GenlCam creates a common application programming interface (API) for cameras regardless of the interface technology or features implemented. Because the API for GenlCam cameras will always be the same, cameras like the A655sc camera can be easily integrated into third party software.

SOFTWARE

FLIR A655sc camera works seamlessly with FLIR ResearchIR Max software enabling intuitive viewing, recording and advanced processing of the thermal data provided by the camera.

MATHWORKS® MATLAB

Control and capture data directly into MathWorksR Matlab software for advanced image analysis and processing.

KEY FEATURES

- Uncooled microbolometer: 640 x 480 pixels
- Gigabit ethernet and usb interface
- * Close-up and telephoto lenses available
- ResearchIR max software included
- * Matlab compatible



Imaging Specifications

Detector Type	System Overview	FLIR A655sc
Resolution 640 × 480 Detector Pitch 17 μm NETD <30 mK		
Detector Pitch 17 μm	Spectral Range	7.5 – 14.0 µm
NETD	Resolution	640 × 480
Time Constant	Detector Pitch	17 μm
Time Constant	NETD	<30 mK
Frame Rate (Full Window) 50 Hz Subwindow Mode User-Selectable 640 × 240 or 640 × 120 Maximum Frame Rate (@ Min. Window) 200 Hz (640 × 120) Dynamic Range 14-bit Digital Data Streaming Gigabit Ethernet (50/100/200 Hz) USB (25/50/100 Hz) Command and Control Gigabit Ethernet, USB Measurement Standard -40°C to 150°C (-40°F to 302°F) Temperature Range Up to 2,000°C (3,632°F) Optional Temperature Range Up to 2,000°C (3,632°F) Accuracy ±2°C or ±2% of Reading Optics Camera f/# Camera f/# f/1.0 Available Lenses 6.5 mm (80°), 13.1 mm (45°), 24.6 mm (25°), 41.3 mm (15°), 88.9 mm (7°) Focus Automatic or Manual (Motorized) Close-up / Microscopes Close-up 25 μm, 50 μm, 100 μm Image Presentation Via PC Using ResearchIR Software General Operating Temperature Range -15°C to +50°C (572°F to 3,632°F) Storage -40°C to 70°C (-40°F to 158°F) Encapsulation IP 30 (IEC 60529) Bump / Vibration 25 g (IEC 60068-2	Imaging	
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Maximum Frame Rate (@ Min. Window) 200 Hz (640 × 120) Dynamic Range 14-bit Digital Data Streaming Gigabit Ethernet (50/100/200 Hz) USB (25/50/100 Hz) Command and Control Gigabit Ethernet, USB Measurement Standard -40°C to 150°C (-40°F to 302°F) Temperature Range 100°C to 650°C (212°F to 1,202°F) Optional Temperature Range Up to 2,000°C (3,632°F) Accuracy ±2°C or ±2% of Reading Optics Camera f/# Camera f/# f/1.0 Available Lenses 6.5 mm (80°), 13.1 mm (45°), 24.6 mm (25°), 41.3 mm (15°), 88.9 mm (7°) Focus Automatic or Manual (Motorized) Close-up / Microscopes Close-up 25 μm, 50 μm, 100 μm Image Presentation Via PC Using ResearchIR Software General Operating Temperature Range -15°C to +50°C (572°F to 3,632°F) Storage -40°C to 70°C (-40°F to 158°F) Encapsulation IP 30 (IEC 60529) Bump / Vibration 25 g (IEC 60068-2-29) / 2 g (IEC 60068-2-6) Power 12/24 VDC, 24 W Absolute Max. Weight 0.9 k	Frame Rate (Full Window)	50 Hz
(@ Min. Window) 200 Hz (640 × 120)	Subwindow Mode	User-Selectable 640 × 240 or 640 × 120
Digital Data Streaming Gigabit Ethernet (50/100/200 Hz) USB (25/50/100 Hz) Command and Control Gigabit Ethernet, USB Measurement Gigabit Ethernet, USB Standard -40°C to 150°C (-40°F to 302°F) Temperature Range 100°C to 650°C (212°F to 1,202°F) Optional Temperature Range Up to 2,000°C (3,632°F) Accuracy ±2°C or ±2% of Reading Optics Foliate Transport Tr		200 Hz (640 × 120)
Measurement Gigabit Ethernet, USB Standard Temperature Range -40°C to 150°C (-40°F to 302°F) Optional Temperature Range Up to 2,000°C (3,632°F) Accuracy ±2°C or ±2% of Reading Optios (5.5 mm (80°), 13.1 mm (45°), 24.6 mm (25°), 41.3 mm (15°), 88.9 mm (7°) Focus Automatic or Manual (Motorized) Close-up / Microscopes Close-up 25 μm, 50 μm, 100 μm Image Presentation Via PC Using ResearchIR Software General -15°C to +50°C (572°F to 3,632°F) Storage Temperature Range -40°C to 70°C (-40°F to 158°F) Encapsulation IP 30 (IEC 60529) Bump / Vibration 25 g (IEC 60068-2-29) / 2 g (IEC 60068-2-6) Power 12/24 VDC, 24 W Absolute Max. Weight 0.9 kg (1.98 lb) Size (L × W × H) w/o Lens 216 × 73 × 75 mm (8.5 × 2.9 × 3.0 in)	Dynamic Range	14-bit
Measurement Standard Temperature Range -40°C to 150°C (-40°F to 302°F) Optional Temperature Range Up to 2,000°C (3,632°F) Accuracy ±2°C or ±2% of Reading Optics Camera f/# f/1.0 Available Lenses 6.5 mm (80°), 13.1 mm (45°), 24.6 mm (25°), 41.3 mm (15°), 88.9 mm (7°) Focus Automatic or Manual (Motorized) Close-up / Microscopes Close-up 25 μm, 50 μm, 100 μm Image Presentation Via PC Using ResearchIR Software General Operating Temperature Range -15°C to +50°C (572°F to 3,632°F) Storage Temperature Range -40°C to 70°C (-40°F to 158°F) Encapsulation IP 30 (IEC 60068-2-9) / 2 g (IEC 60068-2-6) Power 12/24 VDC, 24 W Absolute Max. Weight 0.9 kg (1.98 lb) Size (L x W x H) w/o Lens 216 x 73 x 75 mm (8.5 x 2.9 x 3.0 in)	Digital Data Streaming	Gigabit Ethernet (50/100/200 Hz) USB (25/50/100 Hz)
Standard -40°C to 150°C (-40°F to 302°F) Temperature Range 100°C to 650°C (212°F to 1,202°F) Optional Temperature Range Up to 2,000°C (3,632°F) Accuracy ±2°C or ±2% of Reading Optics Camera f/# f/1.0 Available Lenses 6.5 mm (80°), 13.1 mm (45°), 24.6 mm (25°), 41.3 mm (15°), 88.9 mm (7°) Focus Automatic or Manual (Motorized) Close-up / Microscopes Close-up 25 μm, 50 μm, 100 μm Image Presentation Via PC Using ResearchIR Software General Operating Temperature Range Storage Temperature Range -40°C to 70°C (572°F to 3,632°F) Encapsulation IP 30 (IEC 60529) Bump / Vibration 25 g (IEC 60068-2-29) / 2 g (IEC 60068-2-6) Power 12/24 VDC, 24 W Absolute Max. Weight 0.9 kg (1.98 lb) Size (L × W × H) w/o Lens 216 × 73 × 75 mm (8.5 × 2.9 × 3.0 in)	Command and Control	Gigabit Ethernet, USB
Temperature Range 100°C to 650°C (212°F to 1,202°F) Optional Temperature Range Up to 2,000°C (3,632°F) Accuracy ±2°C or ±2% of Reading Optics Camera f/# f/1.0 Available Lenses 6.5 mm (80°), 13.1 mm (45°), 24.6 mm (25°), 41.3 mm (15°), 88.9 mm (7°) Focus Automatic or Manual (Motorized) Close-up / Microscopes Close-up 25 μm, 50 μm, 100 μm Image Presentation Digital Data Via PC Using ResearchIR Software General Operating Temperature Range -40°C to 70°C (-40°F to 158°F) Encapsulation IP 30 (IEC 60529) Bump / Vibration 25 g (IEC 60068-2-29) / 2 g (IEC 60068-2-6) Power 12/24 VDC, 24 W Absolute Max. Weight 0.9 kg (1.98 lb) Size (L × W × H) w/o Lens 216 × 73 × 75 mm (8.5 × 2.9 × 3.0 in)	Measurement	
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Available Lenses 6.5 mm (80°), 13.1 mm (45°), 24.6 mm (25°), 41.3 mm (15°), 88.9 mm (7°) Focus Automatic or Manual (Motorized) Close-up / Microscopes Close-up 25 µm, 50 µm, 100 µm Image Presentation Digital Data Via PC Using ResearchIR Software General Operating Temperature Range -15°C to +50°C (572°F to 3,632°F) Storage Temperature Range IP 30 (IEC 60529) Encapsulation IP 30 (IEC 60529) Bump / Vibration 25 g (IEC 60068-2-29) / 2 g (IEC 60068-2-6) Power 12/24 VDC, 24 W Absolute Max. Weight 0.9 kg (1.98 lb) Size (L × W × H) w/o Lens 216 × 73 × 75 mm (8.5 × 2.9 × 3.0 in)	Optics	
Available Lenses (15°), 88.9 mm (7°) Focus Automatic or Manual (Motorized) Close-up / Microscopes Close-up 25 μm, 50 μm, 100 μm Image Presentation Digital Data Via PC Using ResearchIR Software General Operating Temperature Range -15°C to +50°C (572°F to 3,632°F) Storage Temperature Range -40°C to 70°C (-40°F to 158°F) Encapsulation IP 30 (IEC 60529) Bump / Vibration 25 g (IEC 60068-2-29) / 2 g (IEC 60068-2-6) Power 12/24 VDC, 24 W Absolute Max. Weight 0.9 kg (1.98 lb) Size (L × W × H) w/o Lens 216 × 73 × 75 mm (8.5 × 2.9 × 3.0 in)	Camera f/#	f/1.0
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Temperature Range Storage Temperature Range -40°C to 70°C (-40°F to 158°F) Encapsulation IP 30 (IEC 60529) Bump / Vibration 25 g (IEC 60068-2-29) / 2 g (IEC 60068-2-6) Power 12/24 VDC, 24 W Absolute Max. Weight 0.9 kg (1.98 lb) Size (L × W × H) w/o Lens -15°C to +50°C (5/2°F to 3,632°F) -40°C to 70°C (-40°F to 158°F) IP 30 (IEC 60529) 25 g (IEC 60068-2-29) / 2 g (IEC 60068-2-6) -40°C to 70°C (-40°F to 158°F) -40°C to 70°C (-	General	
Temperature Range -40°C to 70°C (-40°F to 158°F) Encapsulation IP 30 (IEC 60529) Bump / Vibration 25 g (IEC 60068-2-29) / 2 g (IEC 60068-2-6) Power 12/24 VDC, 24 W Absolute Max. Weight 0.9 kg (1.98 lb) Size (L × W × H) w/o Lens 216 × 73 × 75 mm (8.5 × 2.9 × 3.0 in)	Operating Temperature Range	-15°C to +50°C (572°F to 3,632°F)
Bump / Vibration 25 g (IEC 60068-2-29) / 2 g (IEC 60068-2-6) Power 12/24 VDC, 24 W Absolute Max. Weight 0.9 kg (1.98 lb) Size (L × W × H) w/o Lens 216 × 73 × 75 mm (8.5 × 2.9 × 3.0 in)	Storage Temperature Range	-40°C to 70°C (-40°F to 158°F)
Power 12/24 VDC, 24 W Absolute Max. Weight 0.9 kg (1.98 lb) Size (L × W × H) w/o Lens 216 × 73 × 75 mm (8.5 × 2.9 × 3.0 in)	Encapsulation	IP 30 (IEC 60529)
Weight 0.9 kg (1.98 lb) Size (L × W × H) w/o Lens 216 × 73 × 75 mm (8.5 × 2.9 × 3.0 in)	Bump / Vibration	25 g (IEC 60068-2-29) / 2 g (IEC 60068-2-6)
Size (L × W × H) w/o Lens 216 × 73 × 75 mm (8.5 × 2.9 × 3.0 in)	Power	12/24 VDC, 24 W Absolute Max.
	Weight	0.9 kg (1.98 lb)
Mounting ¼"-20 (on three sides), 2 x M4 (on three sides)	Size (L × W × H) w/o Lens	216 × 73 × 75 mm (8.5 × 2.9 × 3.0 in)
	Mounting	¼"-20 (on three sides), 2 x M4 (on three sides)

Power Connector, Gigabit Ethernet Port, 1000 mB, Screw Terminal RJ-45 Connector: 2-pole: 10-30 VDC, <10W Control and image streaming USB H2 Connector: Camera control and image streaming

Digital I/O Connector, Screw Terminal 6-pole: Digital Out: 2 outputs, opto-isolated, 10-30V supply, 100mA. Digital In: 2 inputs, opto-isolated, 10-30 V.

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